

AMENDMENTS TO THE DRAWINGS

Figure 4 has been amended to include reference numeral 468, as described in the Specification on page 13, line 16. No new matter has been added.

The replacement sheet replaces all previous drawing sheets containing Figure 4.

Attachment A: Figure 4

REMARKS

Reconsideration of the application in light of the amendments and the following remarks is respectfully requested.

Status of the Claims

Claims 1-26 and 28-55 are pending.

Claim 27 has been cancelled without prejudice or disclaimer of the subject matter contained therein.

Claims 1-24 and 28-39 have been amended. Support for the amendments to claims 1, 4, 8, 13, 16, 17, 19, 21, 28, 31, 34, 36, and 37 can be found in the Specification on page 13, line 4 through page 18, line 10; page 18, line 15 through page 25, line 7; and in Figures 2 and 3. The amendments to claims 2-3, 5-7, 9-11, 14-15, 18, 20, 22-24, 29-30, 32-33, 35, and 38-39 were made to place the claims in better idiomatic English, were not made for reasons of patentability, and do not narrow the scope of the subject matter recited therein.

Claims 40-55 have been added. Support for the new claims 40-55 can be found in the Specification on page 10, line 20 through page 12, line 17; page 25, line 17 through page 26, line 2; and in the originally-filed claims.

No new matter has been added.

Rejection under 35 U.S.C. §112

Claims 4, 8, 13, 17, 19, 21, 31, 34, and 37 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner contends that in claims 4, 13, 17, 31, and 37, the term

“first correlating step” lacks antecedent basis. Further, the Examiner contends that in claims 8, 21, and 34, the term “second correlating step” lacks antecedent basis. Additionally, the Examiner contends that in claim 19, the term “second determining step” lacks antecedent basis.

Applicant has amended claims 4, 8, 13, 17, 19, 21, 31, 34, and 37 to ensure that the respective claims contain proper antecedent basis, and submit that claims 4, 8, 13, 17, 19, 21, 31, 34, and 37 are in conformance with U.S. patent law.

Applicant respectfully requests reconsideration and withdrawal of the rejection.

Rejection under 35 U.S.C. §102

Claims 1-4, 6, 8, 10-17, 19-21, 23-31, 33-34, and 36-39 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,865,043 to Shimon. Claim 27 has been cancelled, thus rendering this rejection moot with respect to claim 27.

The Examiner contends that Shimon discloses a decision system 11 that uses two-dimensional analysis (*e.g.*, in shape and time) to decide whether to accept or reject the imaging data received from a patient. See, Shimon, col. 3, lines 45-47; col. 5, lines 46-54; and Figures 1 and 2. The Examiner further contends that because Shimon performs classification of the imaging data by filtering the data through bins 28, Shimon “inherently requires a threshold based on similarity via the comparison of the shape of an ECG signal and a template . . . [and] summing same bin data to obtain a combined value.” (Detailed Action, pages 3-4.) Applicant respectfully traverses the rejection.

Independent claims 1, 16, and 28 are directed to correlating a QRS complex with an ECG signal of a patient and determining a threshold for use in determining a correlation of the patient’s

real-time ECG signal. Specifically, claims 1, 16, and 28 recite “a threshold that when exceeded indicates that the continuous-in-time ECG signal substantially correlates with the . . . template.” Therefore, in the claimed invention, the threshold is **not** a measurement of correlation (*i.e.*, a *r*-value), but rather, a limit that when exceeded, indicates that a correlation exists between the two signals.

In contrast, Shimoni neither discloses nor suggests the “threshold” as claimed in claims 1, 16, and 28. Rather, Shimoni discloses using “windows” 81, 82, 85, 86, etc. that are merely the combination of one or more dimensional parameters, such as time or shape. See, Shimoni, col. 6, lines 45-62 and Figure 1. Further, Shimoni discloses that the “decision circuit sorts the imaging data of the heart beat in question . . . by transmitting it [the heart beat imaging data] to selected ones of the bins in the set of bins 28 if the beat type **passes through** one of the windows. (Emphasis added.)” (Shimoni, col. 5, lines 47-51.) Applicant submits that merely passing through a “window” of time or shape is not the same as having a “threshold” that must be exceeded, as recited in independent claims 1, 16, and 28. Therefore, Shimoni neither discloses, nor suggests, using a “threshold that when exceeded indicates that the continuous-in-time ECG signal substantially correlates with the . . . template,” as recited in claims 1, 16, and 28.

Accordingly, Applicant submits that Shimoni fails to disclose each and every feature recited in independent claims 1, 16, and 28. Therefore, Shimoni does not anticipate the invention recited in claims 1, 16, and 28.

Claims 2-4, 6, 8, 10-11, and 25-26 depend from claim 1. Claims 17, 19-21, and 23-24 depend from claim 16. Claims 29-31 and 33-35 depend from claim 28. Applicant submits that

dependent claims 2-4, 6, 8, 10-11, 17, 19-21, 23-26, 29-31, and 33-35 are patentable for at least the same reasons as discussed above with respect to their respective base claim.

Furthermore, with respect to the rejection of independent claims 12 and 36, Applicant submits that Shimoni fails to disclose or suggest “assigning a weighted score for each ECG channel indicative of a strength of the correlation of the . . . template with the continuous-in-time ECG signal” as recited in independent claims 12 and 36. In contrast, Shimoni merely discloses that “[t]he image data which is generally combined at 26 is further transmitted to storage 72 and/or to display 73.” (Shimoni, col. 5, lines 66-67.) Merely “generally combining” image data does not imply or equate to “assigning a weighted score . . . [that is] indicative of a strength of the correlation” as recited in independent claims 12 and 36. Further, Shimoni does not provide any details as to how the image data, having been filtered through bins 28, is “generally combined.” Therefore, Shimoni neither discloses nor suggests the weighted score summation process as recited in independent claims 12 and 36.

Additionally, Applicant submits that Shimoni neither discloses, nor suggests, “determining a threshold . . . [that is] a combined value of each continuous-in-time ECG signal . . . [wherein] the contribution of each ECG channel to the threshold [is] proportionate to the assigned weighted score for each ECG channel” as recited in independent claims 12 and 36. As noted above, Shimoni merely discloses that the image data is “generally combined” and fails to disclose or suggest the idea of a weighted score. Therefore, it is impossible for Shimoni to disclose or suggest a threshold that is based on the contribution of each ECG channel in proportion to the assigned weighted score for each ECG channel as recited in claims 12 and 36.

Accordingly, Applicant submits that Shimoni fails to disclose each and every feature recited in independent claims 12 and 36. Therefore, Shimoni does not anticipate the invention recited in claims 12 and 36.

Claims 13-15 depend from claim 12. Claims 37-39 depend from claim 36. Applicant submits that dependent claims 13-15 and 37-39 are patentable for at least the same reasons as discussed above with respect to their respective base claim.

Applicant respectfully requests reconsideration and withdrawal of the rejection.

Rejection under 35 U.S.C. §103

Claims 5, 7, 9, 18, 22, 32, and 35 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Shimoni in view of the Examiner's statement of ordinary skill in the art at the time of the invention. Applicant respectfully traverses the rejection.

Claims 5, 7, and 9 depend from claim 1. Claims 18 and 22 depend from claim 16. Claims 32 and 35 depend from claim 28. Applicant submits that dependent claims 5, 7, 9, 18, 22, 32, and 35 are therefore patentable for at least the same reasons as discussed above with respect to their respective base claim.

Applicant respectfully requests reconsideration and withdrawal of the rejection.

Added Claims

New claims 40-41 depend from claim 1. New claims 42-43 depend from claim 12. New claims 44-45 depend from claim 16. New claim 54 depends from claim 28. New claims 46-47 and

55 depend from claim 36. Applicant submits that new claims 40-47 and 54-55 are patentable for at least the same reasons as discussed above with respect to their respective base claim.

New claims 48-53 recite features of the present invention as described in the Specification on page 10, line 20 through page 12, line 17 and page 25, line 17 through page 26, line 2. Applicant submits that new claims 48-53 are patentable over the prior art of record.

CONCLUSION

Each and every point raised in the Office Action dated March 16, 2006 has been addressed on the basis of the above amendments and remarks. In view of the foregoing it is believed that claims 1-26 and 28-53 are in condition for allowance and it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining which the Examiner believes could be resolved through a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

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Respectfully submitted,

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